CHINs in the Context of an Evolving Health Care System

Karen A. Duncan
Health Information Systems
Los Altos, CA USA

Community Health Information Network (CHIN) developments have slowed, due to the chaotic change in the health care system and stakeholders' attendant short-sighted focus. CHINs are a long-term investment that is necessary for the health care system's evolution to maturity. Several arenas of essential CHIN activity are given that would be characteristic of a mature, goal-directed health care system Lack of enterprise-wide computer-based patient record systems is a major barrier. Even in the short term, however, trends and incentives exist that are likely to push stakeholders toward CHIN development. Some of these trends include changes in organizational structure and political pressures. Practical incentives include the need for stakeholder cooperation to achieve healthy communities, the prospects for telemedicine, and the demand for greater quality assurance.

INTRODUCTION

A Community Health Information Network (CHIN) is broadly understood to be an information technology-based network that links health care stakeholders throughout a community.[1] These stakeholders would include such groups as providers, payers, schools, community agencies, and even patients. The goal of a CHIN is to help maintain optimal health for all community residents, so it must be inclusive. That is, an information technology network that links just the hospitals in a chain, or a hospital with its associated clinics, would not be considered to be a CHIN. However, such a network could participate in a CHIN, or even form the basis for a broader CHIN. A final key point is that a CHIN serves its community best when it serves not only health care financing (primarily as a link between providers and payers), but also clinical, educational, research, and management purposes.

Hundreds of CHIN-type entities are in development throughout the United States, but in recent months the pace of new CHIN activity appears to have slowed -- as though the health care system has paused for reflection on this point. Stakeholders who might have been in a position to initiate CHINs have instead directed their energies and resources toward responding to pressures for cost-cutting and/or profit making. Providers in particular are struggling to ensure their future by directing their resources toward reorganization and survival. Information technology resources are of necessity directed toward strengthening the enterprise's ability to communicate, manage, and compete. A CHIN, on the other hand, would require providers to direct their attention outward, toward sharing information with the aim of maintaining and, where necessary, restoring community health. Clearly, provider and CHIN goals are not aligned, at least in the near-term.

Paradoxically, just as the value of information sharing has achieved a critical level of acceptance, the health care system is not positioned to take advantage of it. There are indeed some possible applications of CHINs that might serve provider enterprises' acute needs. For instance, providing electronic eligibility determination, pre-certification, and referral services is a practical and useful first step. Further, the need is undeniable for a computer-based patient record (CPR) that includes all relevant history and is available at any point of service. But few providers have a CPR to contribute to a CHIN, and thorny issues such as security and ownership are unresolved. In any event, these applications goals don't carry enough weight to inspire much CHIN development in today's health care system.

CHINS IN A MATURING SYSTEM

As the health care system does mature and turn its attention to goals relating to individual and population health, a CHIN approach to information handling, with linkages to regional and national information systems, will be essential. This is true whether the predominant payment model is fee-for-service, capitation, a mixture, or something else entirely. Medical Informaticians need to keep in mind the broader goals of individual and population health as they pursue today's near-term objectives.

Dozens of arenas for growth and change are readily apparent where solid contributions to social health are possible, but only through CHIN-style

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information sharing. Here are several examples of goal-oriented activities for a mature health care system.

-- Guideline development. Profesionals groups ranging from hospitals to professional societies to government agencies offer problem-specific guidance to physicians on how best to diagnose and treat their patients. Today, these guidelines may not always be based on the best available information, especially including clinical experience and research studies. The best patient outcomes would be achieved, not solely through enterprise practice guidelines which are often developed from analysis of databases, but through cooperatively produced guidelines that are developed and maintained by national/international professional groups.[2,3] Providers and researchers would participate in development and use guidelines through CHIN connections.

-- Quality assessment. Increasingly purchasers, accrediting agencies and other groups require hospitals and physicians to prove they provide high-quality patient care. Providers respond by making available selected summary information from previous patient records. Today, such information is difficult and expensive to obtain, inconsistent across providers, and often not very meaningful as a measure of quality of care. Using a CHIN, providers could make appropriate databases available to a "quality assessment clearinghouse", also on the CHIN as a value-added service. The clearinghouse would use meaningful, consistent and uniform criteria and methods to provide independent analysis and feedback to both providers and external groups.

-- Risk management. To achieve immediate patient impact, providers of care in high-risk sub-specialties, such as neo-natal care or organ transplantation, would share detailed patient databases, information resources and current clinical research notes. New, critical information would be made available immediately over a CHIN instead of being trapped in publication cycles.

-- Specialty care networks. Diabetes clinics, for example, would maintain patient population databases for cooperative outcomes research and guideline development.

-- Clinical research. Providers would routinely conduct clinical/outcomes research and contribute data and research findings through a CHIN to medical knowledge bases for development of guidelines and educational materials.[4]

-- Health services research. Providers would routinely make operations/management databases available for health services researchers.

-- Distributed health care. Provider services would be available at inner city clinics, schools, workplaces, and/or malls, using CHINs to coordinate information flow.

-- Tele-home health care. Providers would maintain closer contact with home-bound clients using a CHIN for monitoring and communication.[5]

-- Consumer education/participation. Individuals would routinely be involved in self-health care and maintenance. They would acquire information and contribute to their own medical record through a CHIN.

-- Professional/provider credentialling. Extensive opportunities for education, training and credentialling would be available to professionals through a CHIN. Databases of provider and professional information would be routinely available.

Although these activities have undoubted benefit for health care, they will be difficult to realize fully. The reasons range from technical to social to political, but the primary obstacle is that most of them imply or are dependent on the general availability of enterprise-wide computer-based patient record systems. Thus it's likely that the pause in new CHIN initiatives will be lengthy. Furthermore, such cooperative, goal-oriented information sharing would require leadership from within a health care system infrastructure that does not exist today.

INCENTIVE ALIGNMENT

Despite this rather pessimistic view of the near-term future for CHINs, some alignment of incentives, if not of goals, may already be developing between stakeholders and CHINs. Several of these trends/incentives are worth noting and watching. They fall roughly into three areas: organizational, political, and practical.

Organizational trends

Since the beginning of the managed care movement, conventional wisdom has been that vertical integration and integrated delivery systems were the best routes to success. However, not all stakeholders in health care are finding such a high degree of integration either necessary or desirable.[6,7] Three nascent trends are noted here that may become more widespread.

-- Physician control. Physician and other provider groups are beginning to play a larger role in organizational aspects of managed care.[8] Provider Sponsored Organizations are on the increase, and the American Medical Association [9] and the California Medical Association are examples of groups that are helping doctors financially and otherwise to organize themselves.

-- Virtual organizations. A point of view that is gathering adherents is that optimal health care system organization would allow each player to use its best strengths. That is, instead of creating monolithic organizations that do everything, players would retain separate identities and roles: payers would pay, Health Maintenance Organizations (HMOs) would manage and providers would deliver health care. Adherents advocate formation of virtual organizations that integrate electronically and coordinate rather than integrate assets.[10]

-- Quality Assessment. Some stakeholder dissatisfaction exists with the quality assessment approach of the National Committee for Quality Assurance, and extensions and alternatives are being developed.[11] For instance, the California Medical Association is joining forces with the Joint Commission on Accreditation of Healthcare Organizations to form the competing Institute for Medical Quality to monitor health plan performance.

Health care, like most other organizational systems, in fact tends to oscillate among organizational forms.[12] This constant and inevitable shifting of stakeholder boundaries makes it very difficult to plan strategically or practically for integrated information systems. If all stakeholders coordinated information flow through CHINs, these shifts could be considerably less painful and costly.

Political influence

The mood in California is rebellious on several fronts against the HMO tide it had embraced so enthusiastically in the past. Two general ballot initiatives and over 50 pieces of legislation are pending that promise to protect doctors and patients and to control HMO management practices.[13] HMOs throughout the country will undoubtedly make the called-for changes; if they don't, other states may find it necessary to follow California's lead. CHINs would make feasible the otherwise impossible task of monitoring compliance.

Practical incentives

Several pressing instances of the need for communication and information sharing simply cannot be accommodated within a health care enterprise. Cooperation among community stakeholders is essential, to share the expense and/or obtain the necessary breadth of coverage. Several examples are given.

-- Physician mobility. The predominant practice model of the future will probably include contracting with multiple managed care groups. Thus, physicians need electronic connectivity with multiple payers and, from the point of view of the HMO, physicians are mobile, moving in and out of its jurisdiction. Making and breaking these ties would be much easier in communities where CHINs are used by all stakeholders.

-- Client mobility. In environments where capitation is the norm, enterprises already know they need a longitudinal CPR system. Greatest efficiency is achieved when the system is at least community-wide, since clients move in and out of the sphere of specific enterprises. This happens when employers change plans, or when an enterprise takes responsibility for a population such as Medicaid, which has considerable client turnover. A CHIN-based longitudinal CPR is the most practical approach.

-- Healthy community. Managed care groups acknowledge that a key factor in controlling medical costs is maintaining a healthy population. Given client mobility, maintaining health only for one's own shifting client base simply wouldn't be effective. Stakeholders must participate in cooperative initiatives to assess and upgrade community health and awareness as a whole. CHINs could facilitate communication, planning, program delivery and on-going assessment.

-- External factors. Providers know that health-related behavior isn't the only factor in disease. Clients' economic, social, and environmental status, as well as values and attitudes must be considered in models of community and personal health.[14,15] Providers will need to work with other concerned agencies such as schools, employers, or the judicial system, and CHINs can provide the coordinating connectivity.

-- Telemedicine. CHINs could provide a shared mechanism for delivery of telemedicine, especially as such arenas as school-, inner city-, and home telehealth-care become the norm.

-- Quality assessment. In California, a health plan coalition paid $1,000,000 for its 25 members to be evaluated on 6 preventive services.[16] These services are considered by some to be of questionable value themselves, and they certainly aren't good measures of the general quality of care provided by the plans. This example of paying so much for so little highlights the difficulty and expense of assessing quality. The extent of quality assessment issues is just beginning to be understood, and the resulting reporting burden on plans and providers probably will approach the intolerable.

With a CHIN, it would be possible for plans or providers to avoid this burden. They could make available databases derived from their clinical and management records, for analysis, feedback and reporting by independent institutions formed for that purpose. The same databases could be used by the same or other institutions to meet any regulatory reporting burden placed on plans or providers by government or professional agencies.

Such quality-assessment services are just one of an extensive array of CHIN-based practical, value-added services that all providers need. Other candidates include patient education, continuing professional education, demographic databases, statistical services, access to bibliographical, clinical and research databases, and access to guidelines.

CONCLUSION

Although individually these incentives don't carry much weight, collectively, the need for a CHIN approach to information handling appears overwhelming, even in the near term. Indeed, it is difficult to imagine how managed care plans are going to maintain contact with their mobile doctors and patients, achieve healthy communities, and practice and demonstrate their high-quality of care without CHINs. The cost to go it alone is just too high.

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